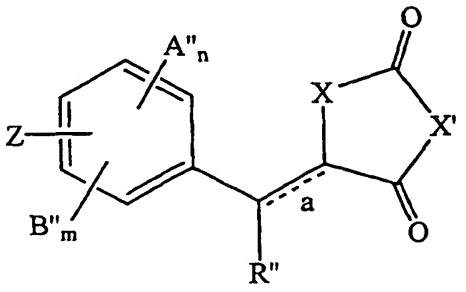
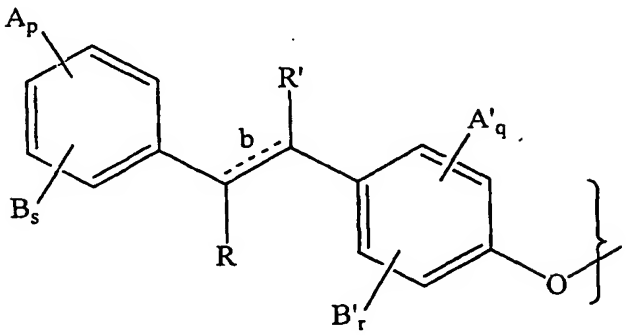
Claims:

1. A compound represented by the following formula 1:

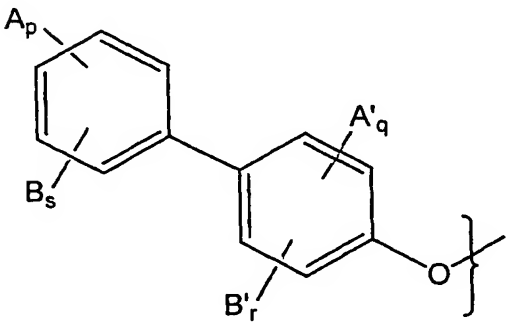


1

wherein Z is



or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; $-CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

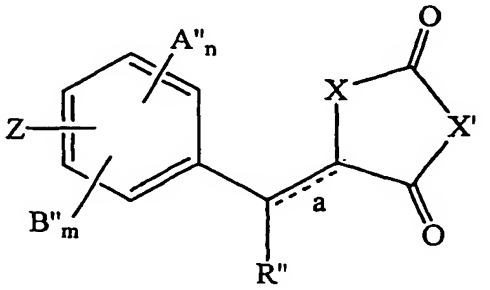
A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

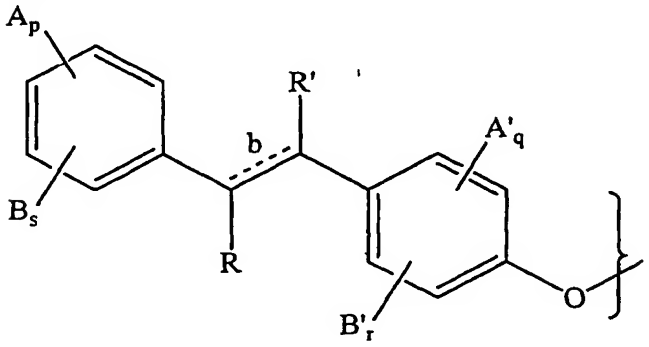
X and X' independently represent >NH, >NR''', -O-, or -S-.

2. A compound represented by the following formula 1:

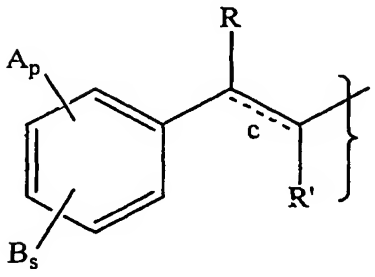


1

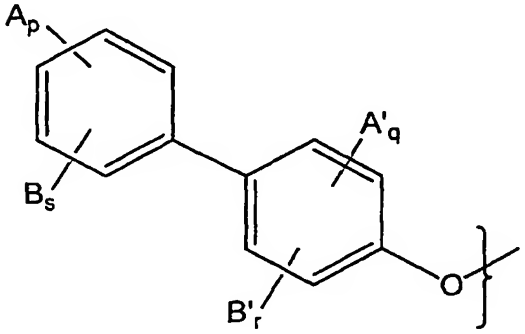
wherein Z is



or



or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a,

b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

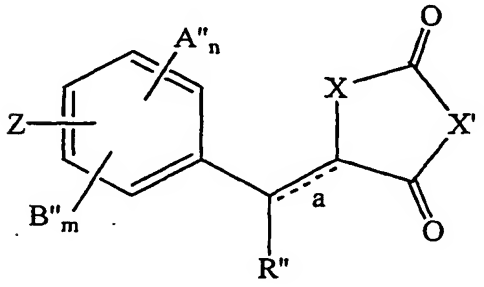
B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-.

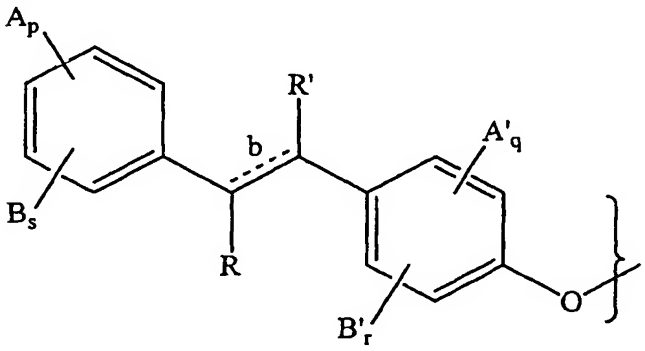
3. A pharmaceutical composition comprising:

a therapeutically effective amount of a compound represented by the following formula 1:

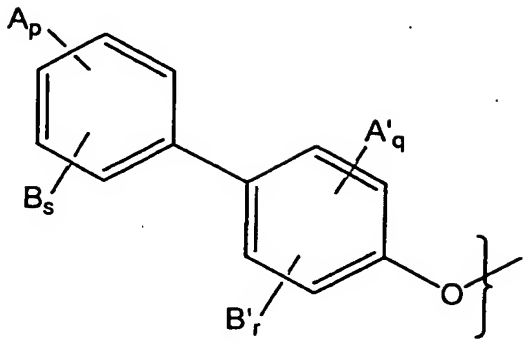


1

wherein Z is



or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; $-CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

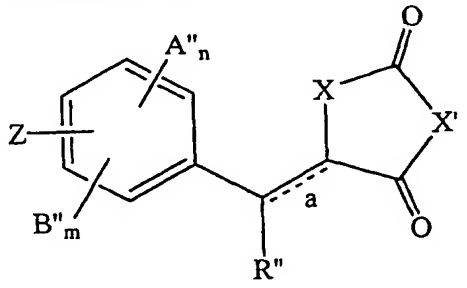
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

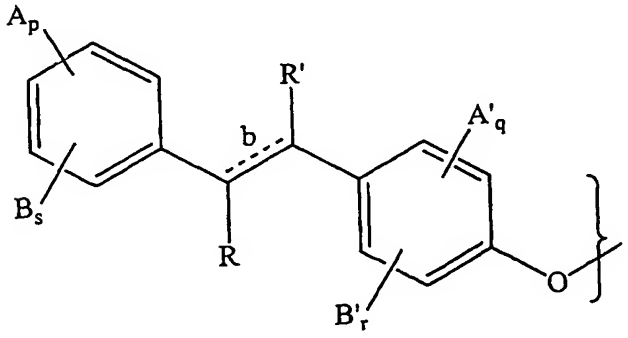
4. A pharmaceutical composition comprising:

a therapeutically effective amount of a compound represented by the following formula 1:



1

wherein Z is



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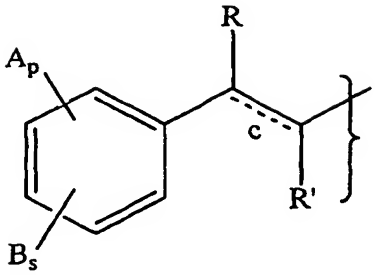
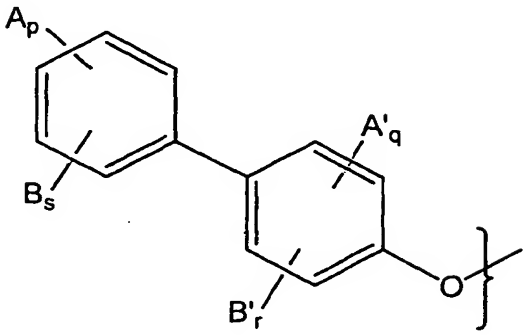


or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

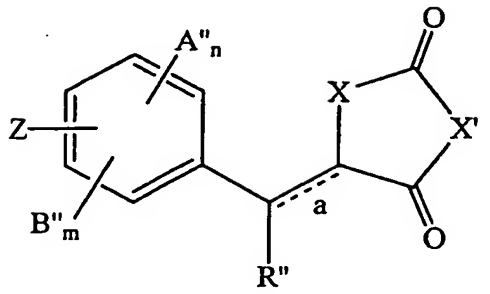
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

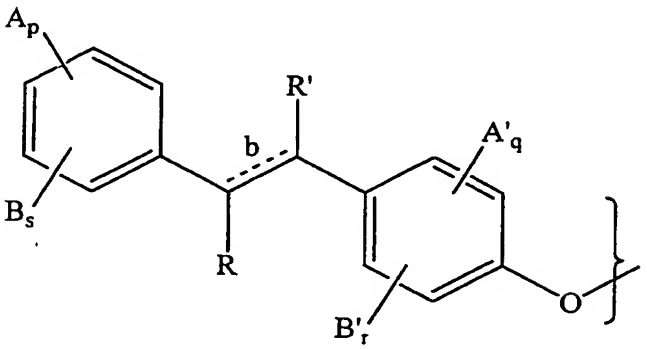
5. A method of treating diabetes comprising:

administering to a subject suffering from a diabetic condition, a therapeutically effective amount of a compound represented by the following formula 1:

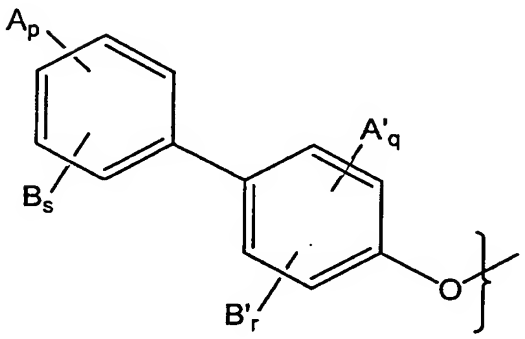


1

wherein Z is



or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; $-CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

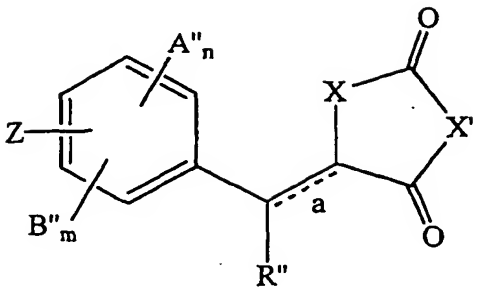
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

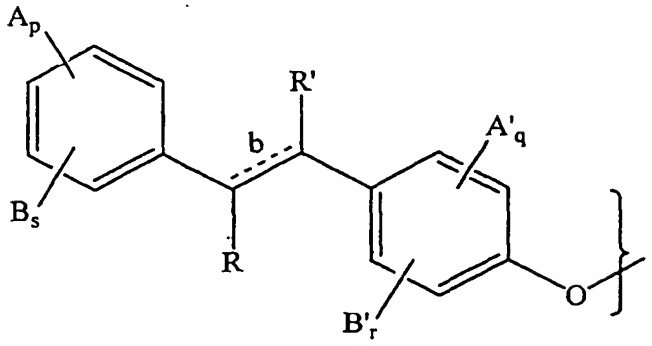
6. A method of treating diabetes comprising:

administering to a subject suffering from a diabetic condition, a therapeutically effective amount of a compound represented by the following formula 1:



1

wherein Z is



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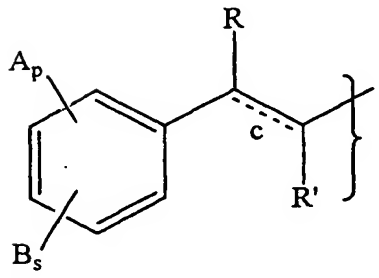
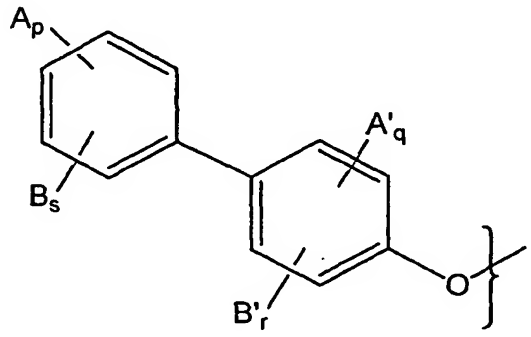


or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double

bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;
A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

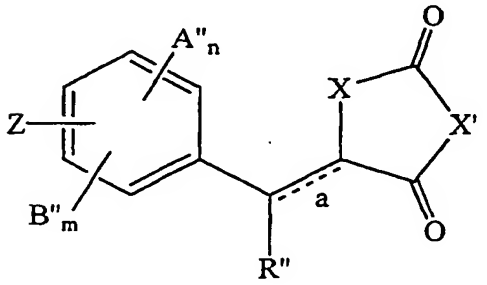
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

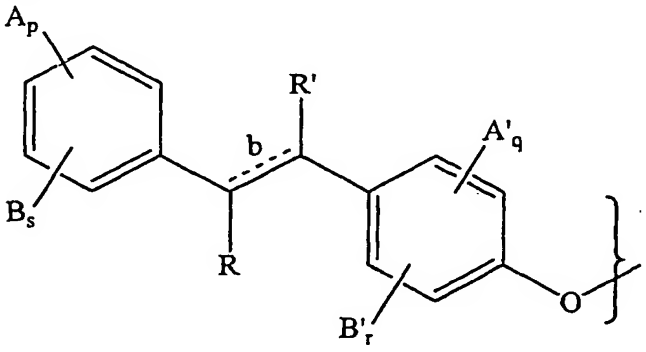
7. A method of treating inflammation or inflammatory disease comprising:

administering to a subject suffering from such condition, a therapeutically effective amount of a compound represented by the following formula 1:

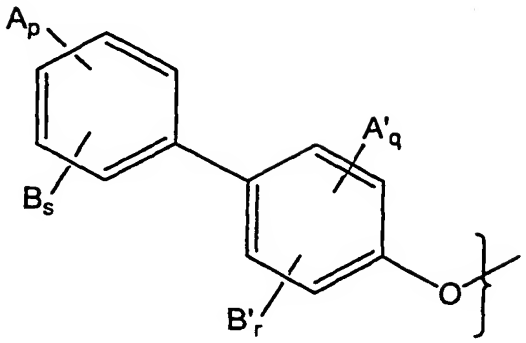


1

wherein Z is



or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; $-CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

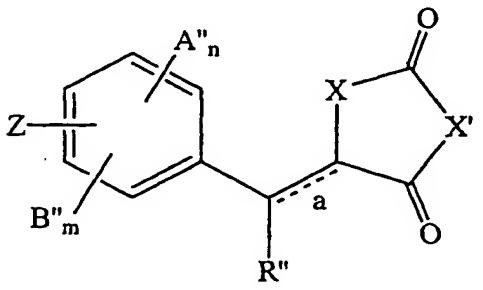
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

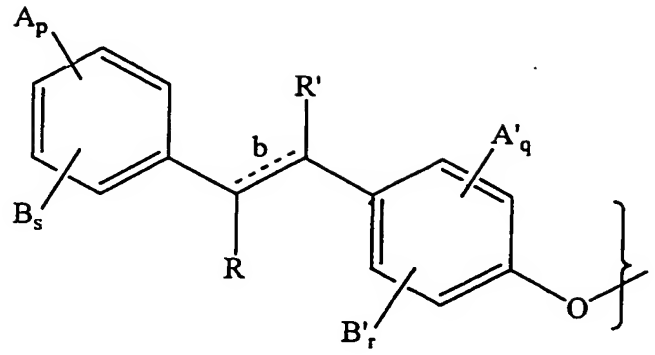
8. A method of treating inflammation or inflammatory disease comprising:

administering to a subject suffering from such condition, a therapeutically effective amount of a compound represented by the following formula 1:



1

wherein Z is



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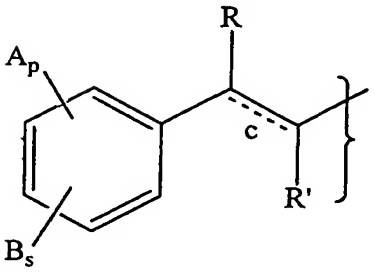
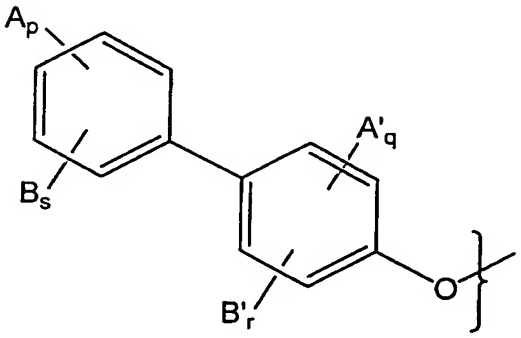


or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; -$CONR_2$''''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; $-OR'''$; $-CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; $-CO_2Z'$; $-CO_2R'''$; $-NH_2$; $-NHR'''$; $-NR_2'''$; -OH; $-OR'''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

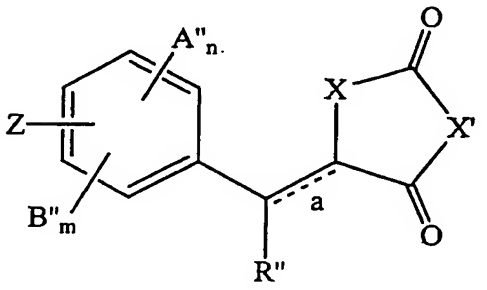
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

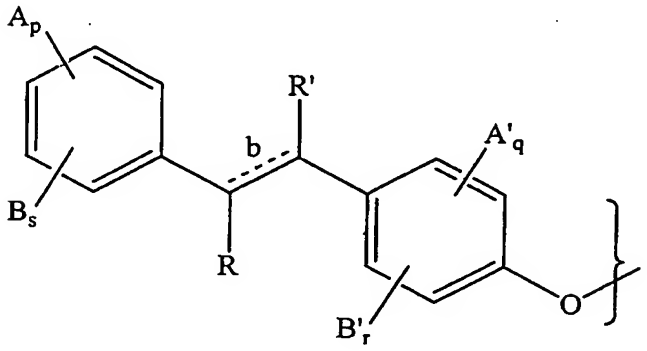
9. A method of treating immunological disease comprising:

administering to a subject suffering from an immunological disease a therapeutically effective amount of a compound represented by the following formula 1:

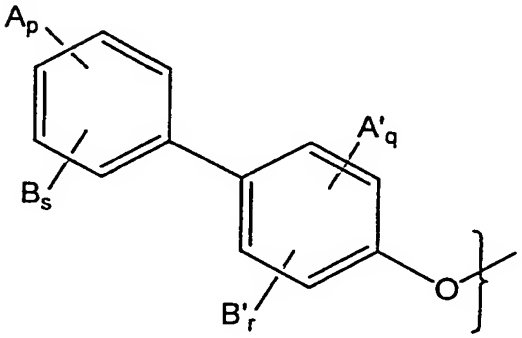


1

wherein Z is



or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; -$CONR_2$''''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or –$(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

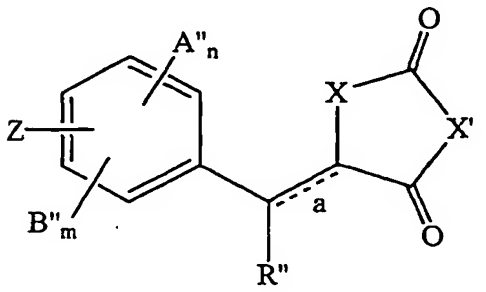
or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

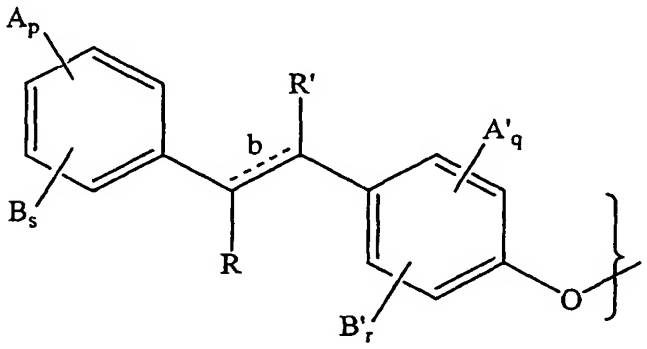
10. A method of treating immunological disease comprising:

administering to a subject suffering from an immunological disease a therapeutically effective amount of a compound represented by the following formula 1:



1

wherein Z is



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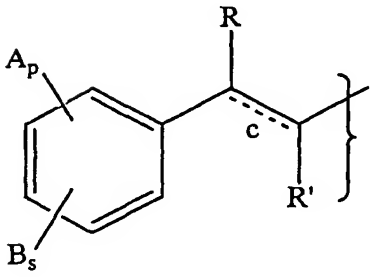
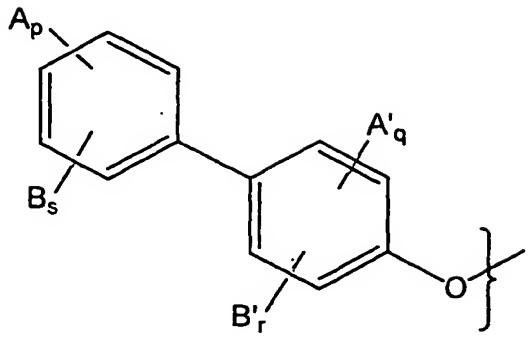


or



n, m, q and r independently represent integers from zero to 4 provided that $n + m \leq 4$ and $q + r \leq 4$; p and s independently represent integers from zero to 5 provided that $p + s \leq 5$; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OR'''; -$CONR_2''''$; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R'' independently represents a hydrogen atom; linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; -CO_2Z'; -CO_2R'''; -NH_2; -NHR'''; -NR_2'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C_1-C_{20} alkyl; optionally substituted linear or branched C_2-C_{20} alkenyl;

R''' independently represents a linear or branched C_1-C_{20} alkyl; linear or branched C_2-C_{20} alkenyl; or $-(CH_2)_x$-Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted C_1-C_{20} alkyl; optionally substituted C_1-C_{20} alkoxy; optionally substituted C_2-C_{20} alkenyl; optionally substituted C_6-C_{10} aryl; or NR_2'''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C_1-C_{20} acylamino; C_1-C_{20} acyloxy; C_1-C_{20} alkanoyl;C_1-C_{20} alkoxycarbonyl; C_1-C_{20} alkoxy; C_1-C_{20} alkylamino; C_1-C_{20} alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent; C_2-C_{20} alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched C_1-C_{20} alkyl; or optionally substituted, linear or branched C_2-C_{20} alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-;

in a physiologically acceptable carrier.

11. A method of inhibiting the activity of TNF-alpha, IL-1, IL-6 or COX-2 which comprises administering to a host in need of such inhibition an effective amount of a compound according to claim 1 or claim 2.

12. The method of inhibiting the undesired action of cytokine or cyclooxygenase which comprises administering to a host in need of such inhibition an effective amount of a compound according to claim 1 or claim 2.

13. The method of treating a disease mediated by cytokines or cyclooxygenase which comprises administering to a host in need of such treatment a compound according to claim 1 or claim 2.

14. The method of treating insulin resistance which comprises administering to a host in need of such treatment an effective amount of a compound according to claim 1 or claim 2.

15. The method of treating hyperlipidemia which comprises administering to a host in need of such treatment an effective amount of a compound according to claim 1 or claim 2.

16. The method of treating coronary heart disease which comprises administering to a host in need of such treatment an effective amount of a compound according to claim 1 or claim 2.

17. The method of treating multiple sclerosis which comprises administering to a host in need of such treatment an effective amount of a compound according to claim 1 or claim 2.

18. The method of treating cancer which comprises administering to a host in need of such treatment an effective amount of a compound according to claim 1 or claim 2.

19. A compound according to claim 1 selected from the group consisting of:
2-{4-[4-(2,4-dioxothiazolidin-5-ylidenemethyl)-phenoxy]-phenyl}-3-p-tolylacrylic acid,
2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-3-p-tolylacrylic acid,
2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-3-p-tolylacrylic acid methyl ester,
3-(3,5-dimethylphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylidenemethyl)-phenoxy]-phenyl}-acrylic acid,
3-(3,5-dimethylphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylic acid,
3-(3,5-dimethylphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylic acid methyl ester,
5-(4-{4-[2-(3,5-dimethylphenyl)-1-(morpholine-4-carbonyl)-vinyl]-phenoxy}-benzyl)-thiazolidine-2,4-dione,
5-(4-{4-[2-(4-methoxyphenyl)-vinyl]-phenoxy}-benzyl)-thiazolidine-2,4-dione,
5-(4-{4-[2-(3,5-dimethoxyphenyl)-vinyl]-phenoxy}-benzyl)-thiazolidine-2,4-dione,

5-[4-(4'-methoxybiphenyl-3-yloxy)-benzylidene]-thiazolidine-2,4-dione,
5-[4-(4'-methoxybiphenyl-3-yloxy)-benzyl]-thiazolidine-2,4-dione,
5-[4-(2',4'-dimethoxybiphenyl-3-yloxy)-benzylidene]-thiazolidine-2,4-dione, and
5-[4-(3',5'-dimethoxybiphenyl-3-yloxy)-benzyl]-thiazolidine-2,4-dione.

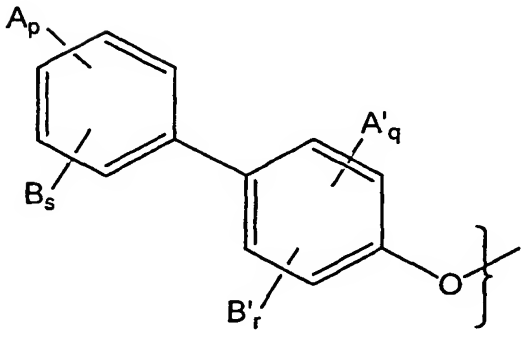
20. A pharmaceutical composition comprising a therapeutically effective amount of a compound selected from the group consisting of:
2-{4-[4-(2,4-dioxothiazolidin-5-ylidenemethyl)-phenoxy]-phenyl}-3-p-tolylacrylic acid,
2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-3-p-tolylacrylic acid,
2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-3-p-tolylacrylic acid methyl ester,
3-(3,5-dimethylphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylidenemethyl)-phenoxy]-phenyl}-acrylic acid,
3-(3,5-dimethylphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylic acid,
3-(3,5-dimethylphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylic acid methyl ester,
5-(4-{4-[2-(3,5-dimethylphenyl)-1-(morpholine-4-carbonyl)-vinyl]-phenoxy}-benzyl)-thiazolidine-2,4-dione,
5-(4-{4-[2-(4-methoxyphenyl)-vinyl]-phenoxy}-benzyl)-thiazolidine-2,4-dione,
5-(4-{4-[2-(3,5-dimethoxyphenyl)-vinyl]-phenoxy}-benzyl)-thiazolidine-2,4-dione,
5-[4-(4'-methoxybiphenyl-3-yloxy)-benzylidene]-thiazolidine-2,4-dione,
5-[4-(4'-methoxybiphenyl-3-yloxy)-benzyl]-thiazolidine-2,4-dione,
5-[4-(2',4'-dimethoxybiphenyl-3-yloxy)-benzylidene]-thiazolidine-2,4-dione, and
5-[4-(3',5'-dimethoxybiphenyl-3-yloxy)-benzyl]-thiazolidine-2,4-dione,
together with a physiologically acceptable carrier therefor.

21. A method for treating diabetes, comprising: co-administering an effective amount of a compound of claim 1 or claim 2 and an agent selected from the group consisting of:
insulin or an insulin mimetic,
a sulfonylurea or other insulin secretagogue,
a thiazolidinedione,
a fibrate or other PPAR-alpha agonist,
a PPAR-delta agonist,

a biguanide,
a statin or other hydroxymethylglutaryl (HMG) CoA reductase inhibitor,
an alpha-glucosidase inhibitor,
a bile acid-binding resin,
apoA1,
niacin,
probucol,
and nicotinic acid.

22. A method for treating inflammatory or immunological disease, comprising: co-administering an effective amount of a compound of claim 1 or claim 2 and an agent selected from the group consisting of:
a nonsteroidal anti-inflammatory drug (NSAID),
a cyclooxygenase-2 inhibitor,
a corticosteroid or other immunosuppressive agent,
a disease-modifying antirheumatic drug (DMARD),
a TNF-alpha inhibitor,
other cytokine inhibitor,
other immune modulating agent,
and a narcotic agent.

23. The compound of claim 1 wherein Z is represented by:



24. The pharmaceutical composition of claim 3 wherein Z is represented by: